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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/161,294	09/28/1998	TETSUNOBU KOCHI	35.C12980	7439

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FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

[REDACTED] EXAMINER

VU, NGOC YEN T

ART UNIT	PAPER NUMBER
2612	10

DATE MAILED: 12/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 09/161,294	Applicant(s) Tetsunobu KOCHI	
Examiner Ngoc-Yen Vu	Art Unit 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on Nov 4, 2002
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above, claim(s) 1, 2, 7-10, 12, and 14 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 3-6 and 11 is/are rejected.
- 7) Claim(s) 13 is/are objected to.
- 8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on Sep 28, 1998 is/are a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some* c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2, 5, 6, 9
- 4) Interview Summary (PTO-413) Paper No(s). _____
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other:

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Election/Restriction

1. Claims 1-2, 7-10, 12 and 14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 8, filed on 11/04/2002.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The information disclosure statements, filed 04/29/1999, 04/11/2000, 01/26/2001 and 11/04/2002, have been placed in the application file, and the information referred to therein has been considered as to the merits.

Drawings

4. Figures 1-2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

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Specification

5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

6. Claim 5 is objected to because of the following informalities:

Claim 5: line 3, change “pixels” to --*elements*--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3, 4, 6 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinohara et al. (US #5,698,844) in view of Shinohara (US #6,049,357).

Regarding claim 3, Shinohara '844 teaches a photoelectric conversion apparatus comprising photoelectric conversion elements arranged on a plurality of rows (Fig. 1, unit pixel 1); amplification means (Fig. 1, amplifier 8), including load means (V_{DD}) arranged in units of

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vertical output lines, for amplifying signal charges accumulated in the photoelectric conversion elements arranged in the plurality of rows; wherein said load means are located on vertically the same side as a direction of outputting the signals from said amplification means, and some of the signals from said amplification means are output in an opposite direction to the direction of signal output (col. 4 line 23 - col. 6 line 14). Claim 3 differs from Shinohara in that the claim further requires vertical scanning means for sequentially scanning signals amplified by said amplification means to read the signals onto the vertical output lines, and horizontal scanning means for sequentially scanning the signals amplified by said amplification means to read the signals onto horizontal output lines. However, it is well known in the art to read signal charges accumulated in the photoelectric conversion elements using vertical scanning means and horizontal scanning means as taught in Shinohara '357 (see Figs. 4 and 9-12). In light of the teaching from Shinohara '357, it would have been obvious to one of ordinary skill in the art to provide the image sensing device shown in Shinohara '844 with vertical scanning means and horizontal scanning means so as to output the signal representing the charges accumulated in the photoelectric conversion elements.

As to claim 4, Shinohara '357 teaches that the signals from said amplification means are output in opposite directions in units of columns or in units of a plurality of columns (see Figs. 9-12).

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As to claim 6, Shinohara '844 teaches that the amplification is a MOS source follower circuit (Fig. 1, amplifier 8), and said load means serving as a load of said source follower circuit is a constant source (V_{DD}).

Regarding claim 11, Shinohara '844 teaches a photoelectric conversion apparatus comprising photoelectric conversion elements arranged on a plurality of rows (Fig. 1, unit pixel 1); output means (Fig. 1, amplifier 17) for outputting as voltage signals signal charges accumulated in said photoelectric conversion elements mounted on the plurality of rows; and shading correction means (Fig. 1, amplifier 8 and V_{DD}) for correcting shading resulting from a voltage signal level difference between said photoelectric conversion elements on different rows, which is output from said output means (col. 4 line 23 - col. 6 line 14). Claim 11 differs from Shinohara in that the claim further requires vertical scanning means for sequentially scanning signals amplified by said amplification means to read the signals onto the vertical output lines, and horizontal scanning means for sequentially scanning the signals amplified by said amplification means to read the signals onto horizontal output lines. However, it is well known in the art to read signal charges accumulated in the photoelectric conversion elements using vertical scanning means and horizontal scanning means as taught in Shinohara '357 (see Figs. 4 and 9-12). In light of the teaching from Shinohara '357, it would have been obvious to one of ordinary skill in the art to provide the image sensing device shown in Shinohara '844 with vertical scanning means and horizontal scanning means so as to output the signal representing the charges accumulated in the photoelectric conversion elements.

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8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shinohara '844 in view of Shinohara '357, as applied to claim 3 above, and further in view of Hack et al. (US #5,536,932).

As to claim 5, the claim differs from the Shinohara references in that the claim further requires signals between adjacent photoelectric conversion elements are averaged. However, it is well known in the art to average signals between adjacent photoelectric conversion elements in order to obtain low resolution images at a higher frame rate, as taught in Hack (see col. 6 line 5 - col. 8 line 2). In light of the teaching from Hack, it would have been obvious to one of ordinary skill in the art to modify the solid state image sensor taught in the Shinohara references by averaging signals of adjacent photoelectric conversion elements so as to obtain low resolution images having a high frame rate.

Allowable Subject Matter

9. Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. **Any response to this office action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

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or faxed to:

(703) 872-9314, (for formal communications intended for entry)

(for informal or draft communications, please label

"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Ngoc-Yen Vu** whose telephone number is (703) 305-4946. The examiner can normally be reached on Mon. - Fri. from 8:00 a.m. to 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Wendy Garber**, can be reached on (703) 305-4929.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

NYV
12/02/2002


NGOC-YEN VU
PRIMARY EXAMINER